AMERICAN UNIVERSITY OF TECHNOLOGY

FACULTY OF HUMANITIES

A thesis submitted in Partial Fulfillment of the Requirements for the Degree of the Bachelor of Arts & Humanities

Prepared

by

Patricia Wakim

American University of Technology

Fall 21/22

TABLE OF CONTENTS

LIST OF FIGURES

ABSTRACT

Natural history films, a.k.a. ‘nature documentaries,’ are currently experiencing a resurgence in popularity, driven in part by distribution over streaming services such as Netflix and Apple TV+, and in part by sophisticated new filming technologies for creating spectacular images.

This study aims to determine how, and to what extent, these technological advances are affecting natural history films, not just at the level of form, but also in their content. Some claim that a ‘revolution’ is occurring in the way these films are made, and, more importantly, in the types of stories that are being told. A competing claim is that the new technologies and distribution channels have led to a ‘blue-chip renaissance’ that depicts a nature that is untouched by humans. This shows a different view from the ‘revolutionary’ one, in which things are moving forwards into new, unexplored areas, as in the ‘renaissance’ things are moving backward by the revival of an earlier style. In contrast to both, there are films that confront climate change, which is a new ‘storyline’, and its making does not depend on new filming technologies. So, it is not revolutionary, but also not a blue-chip.

These claims are evaluated here, by way of a close analysis of an extensive sample of recent films (2018-2022). The films reveal that despite the changes in technique and visual quality, there have been few changes in the choices of stories that are told and the way in which they are told. A notable exception to this, however, is a new emphasis on the urgency of addressing climate change.

INTRODUCTION

In an increasingly urbanized world, most people encounter wild nature and wild animal species mainly by way of visual media — photographs, films, and television, all of which now appear to have converged in the online world. In fact, natural history films, a.k.a. ʻnature documentaries, ʼare currently undergoing an upturn in popularity, mainly because of the distribution over online streaming services such as Netflix and Apple TV+, and in part by sophisticated new digital technologies that made it possible to create even more detailed and revealing images of spectacular, wild places and species.

Yet by most measures, the reality of the situation is contradicting, as there is a fast disappearance of those wild places and species. The "Red List" of threatened species, published annually by The International Union for Conservation of Nature (IUCN), shows sharp declines in both wildlife habitats and populations, whereas the global human population has doubled since 1970 to now nearly 8 billion people (Howard, 2022) resenting a very different picture from what is streamed onto living room screens.

Many in the new production of nature films, however, continue to depict the natural world as uncorrupted by human intervention, sliding away from environmental problems, which have long been thought to turn off the viewers (Soppe & Raissa, 2019). Some filmmakers have long believed that their films lead to pro-nature attitude change, and that this, in turn, will lead to pro-conservation behavior change, so long as they made the animals look interesting and beautiful (Bousé, 2000: 30, 31). Yet the very decades in which nature films increased in production output as well as in popularity (Davis, 2018), saw significant decreases in the number of wild animal species, demonstrating a surprising inverse relationship.

Now, in a time where the filming technology used in natural history films advances rapidly, some filmmakers and producers have suggested that the technological changes in the way nature is presented will mean changes in the way it is perceived and understood by audiences (Movidiam, 2016). Today's technologies make the viewers closer than ever to the animals while experiencing nature, offering more vivid images than ever. As filmmaker Derek Joubert says "the images are just beautiful. It looks like you are there with the lions." (Champagne, 2013).

Historically, some technological innovations have brought sweeping changes to the film medium, such as the conversion to sound[1], the advent of stereo, and the introduction of the widescreen[2]. A bigger frame allowed the *mise-en-scene* to be more elaborate and to carry more of the weight, so widescreen also decreased reliance on shot/reverse-shot editing. This is not so true in nature films, as there are no conversations between two characters, yet with the new HD images, drone cams, and others. History may lead us to think that with the emphasis on mise en scene that there is going to be a slowdown pace of editing in favor of big and beautiful images, but in my viewing that not what happened, for example in a scene from *Surviving Paradise: a Family tale (2022)* a simple scene of an elephant walking involves a long shot, close ups from different angles because of all the camera possibilities, so we really don't see that slow down editing speed just because the mise en scene now is more spectacular.

More relevant here, since its introduction in the mid-1990, digital imaging technology has changed the production, distribution, and exhibition of films (Cook, 2016: 71), as now it easier to post and view digital videos through the "web" in mere seconds (Palmer, 2010: 210).

[1] It was completed by 1929, and it is one of the greatest contributions to the development of this medium as we know it today (Cook, 2016: 151, 161).
[2] the introduction of widescreen in the mid-1950s affected ***mise-en-scene***, (Giannetti, 2014: 47).

Hollywood started to capture film digitally in 2000 but it was not until 2013 that it became more common than celluloid production (Follows, 2017). With digital capture today, a filmmaker can shoot hours of raw footage and examine them on the spot. For instance, Dereck Joubert says that now he misses the action less frequently shooting on HD, while also getting a lot more footages than ever before that are "stunning" (Champagne, 2013). Also, they can digital filmmaking enable to change the content of a footage (Palmer, 2010, 136), and that offers for nature documentaries another way of staging after the "digital magic" as Palmer called it, now it is easier to manipulate the image with digital effect and multiplied animals in hers for example.

Also, it's important to note that 16mm film, which was for decades the preferable standard in wildlife film/TV production, looked good on the old TV screens, but not on today's high-def flat TV screens make (Bousé, 2000: 190), That is why it is said that old subjects can now be revisited, and all the old stories retold (Walsh, 2016). The real question is whether the new technologies resulted in changes in storytelling.

Some leading voices in the wildlife and natural history film industry have proclaimed that a "revolution" is occurring not only in the way the films are made, but in the kinds of stories being told, and in the way, they are told (Walsh, 2016; Chaves, 2015; Movidiam, 2016). To, assess these claims, and the questions they raise, this study will focus on a sample of recent, big-budget film that employ new technology. The terms "wildlife film," "nature documentary," and "natural history film" will be used largely interchangeably.

The emphasis will be on storytelling, and whether it really has changed as a result of technological innovations, as many have claimed, or whether traditional storytelling conventions endure in spite of changes in filming technology.

LITERATURE REVIEW

i. Background: History & Technology

There has always been some technological improvement that affected the way Natural History Films are made by introducing new equipment or improving others. Arguably, that has helped shape how people have perceived nature when encountering it in film and television. For instance, now with all the high-tech development of technology, the final product is vividly rich with the help of the highest definition camera equipment that film an image of nature that is detailed and clearer than ever. Above that all this has helped shape how people have perceived nature when encountering it in film, such as revealing aspects of wild animal life not seen before.

Also, it can help to depict an image of nature that raises in the viewer's mind the feeling of wonder, as this feeling is not only related to showing new animals but by the clarity, colors, and perspective of that showcasing that is afforded by the latest technologies (Kressbach, 2019: 5). As one observer noted "We can at the same time pretend to forget the presence of these technologies and take simple pleasure in the god-like wonder and apparent freedom of the moment" (Bagust, 2008: 224).

In 1986, for example, the "Critter-Cam" was invented by marine biologist and filmmaker Greg Marshall with the National Geographic Society (Palmer, 2000: 157). This tiny camera could be physically attached to an animal (Figure 1), revealing new behaviors that were hard to observe and film in any other way. It is a video capture technology that helps both scientists and filmmakers to capture footage they cannot see or they cannot take it because they can't approach the animal. Despite some people arguing that this act is intrusive towards

Figure 1

This tiny camera could be physically attached to an animal

the animal, it can be caught on camera as normal behavior (Palmer, 2010: 158). In *March of the Penguins* (2005) Critter-Cams were deployed. Another version of it was made to be able to document deep-sea hunting under 3000 pounds of pressure. Today, they have improved to become lighter so they could be even attached to fish (Strochlic, 2018).

Time-lapse photography was developed in 1910, slow motion, and microphotography progressed considerably with time (Bousé, 2000: 62; Louson, 2018: 33). All these advances have permitted new and unseen details to be shot and seen. Many species were not able to be filmed outside the studio, until the advent of the fiber-optic camera. So, when filming ants there was a use of a telephoto lens, slow or fast motion permitting the audience to see details they would not be able to in other circumstances (Horak, 2006: 461; King, 2014: 65). These techniques were employed, for example, in *The Private Life of Plants* (1995), which offered "a privileged, almost voyeuristic, glimpse of worlds that would normally remain hidden" (Louson, 2018: 33). All these techniques continued to develop, and became a part of the genre's kit of techniques (Louson, 2018: 33).

Telephoto lenses were used in non-fiction films since the first decade of 20 century (Petterson, 63), and natural history films started using them in the 1920s (Bousé, 2000: 28). This allowed a very different kind of film to be made. Filmmakers could pursue animals in their natural habitat without the need to go to a zoo to get some particular shots that they could not get in the wild. It helped to get a close-up view of animals even though they were far away from the camera (Figure 3). Another significant difference was that when telephotos came in, filmmakers began to focus on the animals, without the need to be in the frame themselves, interacting in some way with the animals, such as shooting them. So, the style and approach did change, and viewers were able to learn more about animal behavior, although slowly of course, as everything goes. Still, it could be the first step in what Peter

Steinhart (1988) much later called a “revolution in intimacy” through the use of close-ups as shown in figure 2.

After that, during the post-war period, 16mm portable lightweight cameras were introduced. By the late 1950s and early 1960s documentary filmmakers began to use these cameras, which allowed much more freedom in recording subjects without being restricted by equipment that was large and heavy (Michael, 2004; St-Hilaire, 2018). As before the combination of heavy camera and tripod made filmmakers’ job an uneasy one, it let them miss many shots. “Kearton had to give up filming mountain goats in the Rocky Mountains in 1912 because the camera was too heavy (40 pounds),” as shown in Figure 4. Also, as Kearton points out, by the time they prepare the equipment to take the shot, the incident would already be finished (Petterson, 2011: 81).

And recently with films like *March of the Penguins* (2005) even more sophisticated equipment were used, such as smaller and lighter cameras, and all that due to technological advances (Palmer, 2010: 27).

Shooting at night was always a challenge for filmmakers; it was a hard process to film animals at that time. However, in the early 2000s, the BBC started using infra-red night-vision lenses more frequently, as shown in Figure 5 and 6, and the quality of the night vision has improved since then. (Fong & Lee, 2017). New behaviors could be shown for the first time as filmmakers could now shoot and follow animals at night with less obtrusive filming techniques (Turner, 2018). For example, before infrared vision, to film animals at night, artificial light was used, consisting of big white lights, generators, and other equipment that would have startled the animals, and perhaps altered their behavior (Turner, 2018).

Figure 2

Figure 3

It helped to get a close-up view of animals even though they were far away from the camera

Figure 4

What's more, using artificial lights would put some species in danger, making them vulnerable to predation at night (Palmer, 2010: 215). So, using infrared, which is invisible to us and other mammals, is the first non-intrusive way in filming at night, and also to show new behaviors, and perhaps even tell different stories. As Chadden Hunter, producer of the "Grasslands" episode of the BBC's *Planet Earth II* says "There are all sorts of natural history stories that we thought were impossible to film, so now we're scrambling out to get them." (Fong & Lee, 2017).

In addition, the invention of the motion stabilizers, then the move from super 16mm to HD digital, along with the ultra-large flat-screen TV now owned by a big number of home viewers, all made *Planet Earth* (2006) more vivid and detailed than anything seen by viewers at home before (Louson, 2018). That created a problem because now they could not show that scene because of blood, for example, as before on the screen at the image has become much clearer and vivid so it may be too graphically detailed for some viewers (Bousé, 2000: 189).

Aerial filming has also advanced through the years. Before 2000, helicopters were used to get aerial footage, as seen in older natural history films, like the long-running American television series, *Mutual of Omaha's Wild Kingdom*[3] (1963-82). However, the presence of helicopters was visible because of "grasses flattened by the propellers 'wind or animals fleeing the pursuit" (Louson, 2018: 23).

Then more advanced aerial camera techniques were introduced, such as the "heligimbal," which permits filmmakers to zoom in on the action from long distances without disturbing the animals (Figure 7) (Mills, 2010, 195). "Animal behavior was less likely to be disrupted

[3] *Mutual of Omaha's Wild Kingdom* was a series that ran on American television from 1963 to 1988. https://www.imdb.com/title/tt0121949/

Figure 5

Figure 6

Figure 7

Then more advanced aerial camera techniques were introduced, such as the "heligimbal," which permitted filmmakers to zoom in on the action from long distances without disturbing the animals.

by unobtrusive filmmaking techniques and equipment such as the heligimbal" (Losson, 2018: 23). That important innovation, the "heligimbal," was used in *Planet Earth* (2006), and continued with the following programs that allowed for long and stable aerial shots (Louson, 2018).

By 2010, camera drones were introduced. They were equipped with different art techniques, such as infrared cameras, all guided by a remote ground control system. The materials used in them were composed to absorb vibration, which decreases the sound produced, and allowed them to film silently. At first, there were larger drones that were impractical for natural history filming, but recently, since the advent of smaller, high-quality drone cameras, as producer and zoologist Colin Jackson says," we've seen an explosion in the use of them" (Bonthuys, 2020). Filmmakers now could get entirely different kinds of shots. "With them, we can achieve breathtaking imagery that just is not possible any other way — even with a full-scale helicopter." (Garrison, 2017). They can follow the action more easily and without disturbing the animals in the wild as before when using a helicopter. Filmmakers could now be more discreet while taking their footage with let them capture natural behavior (Louson, 2018). *Planet Earth II (2016*) used such new technology, which was unavailable even when *Planet Earth* (2006) was shot back in 2006 (Flynn, 2017). The differences between the two series are clearly visible.

John Downer has developed a variety of "Spy cams." These differ from the Critter-Cam, which is mounted on the animal itself. Spy-cams are a very mobile and camouflaged robot designed to run alongside the animal without disturbing it or upset the animal it is filming. In *Lion: Spy in the Den* (2000), Downer created a remote-controlled rock on wheels, with a rotating turret that worked as a camera (Figure 8). It moved among the animals and permitted to "get wide angle close-ups among the animals" (Horaczek, 2012). That was a new way to film animals without the need for the filmmaker to hide by constructing hidden places of

stones or building tents with plants that grew naturally there as Richard Kearton used to do as it shown in Figure 9 (Petterson, 2011: 79)

Technology was a big help and it is what permitted this kind of filming to happen. For example, the technical advances permit to strap the highest camera quality, but at the same time the smallest to a bird to make the bird comfortable. That was difficult to do before. Also, smaller HD camera, with a wide lens permitted to see the bird in the frame not just his perspective as it is shown in Figure 10. So, the arch of the wing can be seen while the bird is flying along with fantastic wrap-around view (Horaczek, 2012).

Spy Cam, as the filmmaker says, can film normal behavior because it can be in the heart of the group of the animals without disturbing them, because they will make it smell like them, so when the animal approaches the robot, he will know that there is no danger and accept it (Hautzinger, 2017).

All these technological innovations have changed the ways in which animals are seen by audiences. The technological improvement affected 3 or 4 aspects of filming: the first aspect is image quality, which has clearly improved a great deal. Today the advances continue to occur, starting with the digital technology, 4k instead of HD, drones, smaller equipment, and so on. One of the highest-quality films making use of these innovations was *Planet Earth II* (2016), where most of these techniques are used (Collins, 2017). Also, now there is an upgrade from 4k to 8k. *The Mating Game* (2022) was the first natural history series to be shot entirely in 8k (Boyd, 2022).

The second aspect is point of view, which could be taken now through the use of drones to film birds' POV for example, enabling it to look more dramatic through it fast stabilized movement, and critter cam for example attaching it a Penguin as a POV shot, in a scene where he is hunter under water.

\

Figure 8

Figure 9

Figure 10

The arch of the wing can be seen while the bird is flying along with fantastic wrap-around view.

The third aspect: shooting logistics, for example, as discussed before, telephoto lenses enabled filmmakers to get closer animal's shots in the wild without the need to go to a zoo, AND Spy Cam permitted filming animals from inside their colonies, close to them, for example with penguins because it is difficult to film from inside when they are packed together (Hautzinger, 2017).

Some people in the industry are claiming that these new technologies are leading to a "revolution." Ed Charles says that "here's been a revolution in technology, drones have revolutionised the way we can do a lot of stuff" (Walsh, 2016). Others, such as Gavin Thurston, also agrees as he says "we are in a revolution." (Chaves, 2015). BBC Producer Tom Hugh-Jones says in regard to technology improvement," The advances are endless and relentless but there have been some specific stand out developments that have completely revolutionized wildlife film making" (Movidiam, 2016).

Others claim that due to these advances they are also a change in stories. "Stories that were done for *Life of Birds* for example, almost 15 years ago, we can film again but bring a totally new feel to it." (Walsh, 2016). Executive producer Mike Gunton says that the advances in the camera traps which are triggered by motion enabled them to film animals that rare very rare and lives secretively. " It allowed us to tell that story, which was untellable without that technology." (Nguyen, 2015). Producer Gavin Garrison says," I have high hopes that drones will help us craft narratives that continue to surprise and delight audiences around the world." (Garrison, 2017).

Are all these developments presenting animal behavior in ways that are likely to change how they are understood? Natural history films have almost always been a genre depending heavily on the creation of emotionally compelling narratives — stories that hold audience attention (Bousé, 2000). As indicated earlier, with the arrival of telephoto lenses, the kinds of stories changed because filmmakers no longer had to be in the frame (Bousé, 2018). Other

than that, there were of course the changes brought about by the arrival of sound. In mainstream cinema it led to the emergence of musicals, and to dialogue-driven comedies in which the humor was in the verbal wit, and often in the speed at which the lines were delivered (Cook, 2016: 179, 203)

So, to what extent are the technological innovations happening today bringing changes with regard to the wildlife film storytelling?

ii. Editing technique in Natural History Films.

Natural history films have systematically applied Hollywood editing techniques for spatial and temporal continuity[4]. The late BBC Producer Christopher Parsons refers to them in his book "*Making Wildlife Movies - A Beginner's Guide"* (1971). He discusses how to shoot natural history film from experience, the best equipment to use, what to do in different situations, the different approaches to animals, and others. However, most relevant to this analysis are his two chapters dealing with "built-up sequences" and "editing." Parsons names the editing techniques used to create a sequence such as matching action, establishing shots, and consistent screen direction, which are all named in other books dealing specifically with editing techniques used for continuity in Hollywood films (Parsons, 1971: 145-153, 166-169).

Also, other analysts in the field mention these techniques in their books, such as Palle B. Petterson in his book *Cameras into the Wild* (2011), in which he talks about early history of natural history films. The book answers different questions such as "How and why did

[4] Natural history films conventions are influenced and have borrowed some of the fiction film editing techniques. Robert B. Ray in "A Certain Tendency of the Hollywood Cinema" (1985), examines the formal structures of the Hollywood studio film, with its "habitual subordination of style to story" (p. 33). Most important to this research, however, is his discussion of the classical Hollywood editing techniques to maintain temporal and special continuity, effectively making the editing 'invisible.'

contemporary film technology, projection facilities, and narrative techniques influence the development of films about nature and animals?" Petterson mentions the use of an animal point-of-view, eye-line matches, and other familiar techniques for maintaining temporal and spatial contiuity in natural history film (Petterson, 2011: 125, 184), just as Ray discusses in relation to Hollywood film technique. Warren (2000) has also noted that Hollywood techniques are used in natural history films to promote viewers' emotional identification with individual animals (Warren, 2000: 62, 92).

Among scholars, then, natural history films have long been known to appropriate Hollywood formal conventions. They are not like they used to be before 1950, when they often looked more like newsreels. "Natural history documentary in the 1950s and 1960s was much more closely allied to these newsreels of the day than to contemporary fiction film" (Collins, 2017: 61).

iii. Classical Story Model and Narrative Conventions.

By now it should be clear that natural history films have long relied on Hollywood formal conventions, and that the purpose of these has been to serve narrative — i.e. cinematic storytelling. Many scholars agree that narrative in wildlife films really took off in the early 50s as a result of Disney's "True Life Adventures," and that these had an enormous influence on subsequent wildlife filmmaking, with regard to characterization and plot structure (Bagust, 2008: 218; Bousé, 2000: 62). Animals in Disney films were often individualized and given names (Hilderbrand, 2010), 2010; Horak, 2006). The tradition of named characters, such as Disney's '*Perri' the Squirrel* (1956), was carried on with more 'serious' productions, such as "Bold Cub" in *Day of the Jackal* (Partridge Films, 1992), "Cane" in National Geographic's *Yellowstone, Realm of the Coyote* (1996), and many more.

Scholars studying the history and aesthetics of natural history films and have come up with various definitions and descriptions. Several of these studies are related to each other, and agree to some extent on such things as the use of dramatic storyline, compelling narratives, and the use of the story models that viewers have become familiar with over the decades.

In *Wildlife Films* (2000), Derek Bousé, discusses the history of the genre from the beginning of motion pictures to the new digital media at the end of the twentieth century. He points to the narrative conventions of the classical Hollywood style that have influenced and shaped how animals are portrayed in natural history films. He discusses what he calls 'classical' natural history films, and how these often-portrayed animals in their surroundings to resemble human family and culture. Narrative models and the reliance on an individual protagonist and other different classical patterns help make the films more satisfying and attractive for the viewers. He suggests that it is largely their narrative structures that made natural history films a discrete film *genre* with its own codes and conventions.

A number of the different story models in natural history film were mapped out by Thomas Norfelt in 1993. One of the most popular of these is the year-in-the-life storyline, which goes back to films made one hundred years ago and is closely tied to our sense of nature and the seasons. Some storylines center on the theme of family; others on members of the same species that live in different habitats. Norfelt points to other story models such as films based on specific behavior patterns, or on stages in animal life, such as annual migrations. Also, there is the territorial category depicting particular habitats. These are the first three models discussed by him and more others are available in his article (Norfelt, 1993).

It seems that the 'territorial 'model is one of the most common even today, because we can see it in most of these big HD mega-series that come recently, such as *Planet Earth* (2006) that explore the world's jungles, mountains, deserts, islands, grasslands and our newest habitat – cities (Travers, 2017). Many isolated natural events in a habitat are unified by day

or night cycle (Norfelt, 1993), as seen in *Our Planet* (2019), where each episode depicts a different habitat such as: Forests, Frozen word, coastal seas and others.

Other authors have also listed different story models in the natural history film and mega-series. Langley discusses the different stages of making the BBC series *The Living Planet* (1982), starting with the birth of a series to the final product that is seen by the people. He describes the story models used in various episodes in the series, and whole programs about a specific *kind* of habitat shown existing in different parts of the world (deserts, forests, etc). Also, another model that, as he said, showed back then how far the concept has had developed is based on the geological cycle, such as the volcanic eruption. Unlike the story model seen in *Life on Earth* (1979) that some thought was old-fashioned, by studying the kingdom of the animal world by separating into biological 'families' (Langley, 1985: 6-7).

Story models 'themes were also a point of discussion in Parsons's *Making Wildlife Movies* (1971). In his scripting chapter he names three of them in different fields of work: life histories, ecological studies, and mood films (Parsons, 1971: 157-161). The first one focuses on the life cycle of a particle species.

Different natural history films are also discussed by Piers Warren in *Go Wild with Your Camcorder - How to Make Wildlife Films* (2006) in which he gives a good amount of information and advice required to get into natural history filmmaking, even if just as a hobby. He discusses camera work, shooting sequences, and many other points. He lays out different themes for natural history films, some of them we also see mapped out in other books, such as the life cycle of an animal, an individual, a year in a habitat, dawn to dusk, and others.

Producer Christopher Palmer, in his book *Shooting in the Wild: An Insider's Account of Making Movies in the Animal Kingdom* (2010), discusses audience fascination with

charismatic megafauna, and how what appears on the screen is driven largely by ratings and audience preferences. He argues that the story is the most important element, however, and that a subject matter needs to be shaped into a story that will often need a 'hero.'

Among all these perspectives, there is a kind of consensus regarding the importance of narrative and storytelling that comes down to: 1) smooth narrative continuity; 2) effective (emotionally compelling) filmic storytelling, 3) use of the same story models that viewers are familiar with. So, it is clear that wildlife films have been basically a storytelling form.

iv. Blue Chip model after technological improvement and market preference.

i. Blue Chip films and environmental problems

"Blue Chip" wildlife film is a category perhaps ideally suited to today's HD and larger formats for portraying spectacular panoramas. As defined by Bousé, "blue chip" wildlife films exhibit these features: (1) the depiction of mega-fauna—big cats, bears, sharks, crocodiles, elephants, whales, and the like; (2) visual splendor, (3) dramatic storyline, (4) absence of science, (5) absence of politics, (6) absence of historical reference points, (7) absence of people (Bousé, 2000: 14, 15). It is important to note the absence of politics and historical references in favor of a sense of timelessness, leaves little to no place for serious environmental problems. The idealized portrayal of a pristine natural world is the essence of blue-chip films (Bousé, 2000: 134, 188).

Now, some are claiming that the supposedly 'revolutionary' technology is permitting them to tell different, "more ambitious stories" (Nguyen, 2015). Will things change in regard to the depiction of what is happening from problems on the planet? David Attenborough has argued that showing too many environmental problems is a turn-off for the viewer (Watts,

2018). Although they will mention it in the spoken narration, Attenborough has noted, "As we all know, the visual image is much more powerful than the spoken word" (Burgess & Unwin, 1984: 96). On the loss of wilderness, wildlife cameraman Stephen Mills has written,

> So long as we maintain the myth of nature, our programmes find a wide and appreciative audience. … But as viewing figures adamantly prove, once we make a habit of showing the bad news, our audience slinks away. (Mills, 1997)

For that, it has been thought in the industry that depicting nature as unharmed by human intervention will be more pleasing to the audience. When they show heavy content that sheds light on some problems nature is facing, it has been feared that the viewer is more likely to change the channel. With today's technologies and environmental problems, people are more aware of it. It is hard to deny them. Producers and filmmakers may no longer be able to depict nature as before, in which it "appears idyllic, a tapestry showing animals living in harmony with one another and thriving under the rigid but benevolent supervision of God" (Ganetz, 2004: 200). That depiction caused many people to criticize these films for downplaying environmental problems (Pershina & Soppe, 2019). "[T]here are two planet earths. One of them is the complex, morally challenging world in which we live, threatened by ecological collapse. The other is the one we see on the wildlife programs…" (Monbiot, 2002).

Exposing the problems to the viewers through popular natural history films may b e one of the most effective ways to reach a big audience, and is often thought to be an effective way to get the viewer care about nature. "People with less exposure to nature know little and care less", and such exposure and knowledge is becoming more and more important as societies become more urbanized and have less contact with nature (Wunder & Sheil, 2013). Viewers will not know what is happening in the natural world, especially if the only image they see of it is the Blue Chip vision, where it appears untouched by any human intervention, and

presented in a highly aesthetic form (Hilderbrand, 2010) "The viewer may be led to believe that things cannot be that bad for biodiversity, when what they are seeing on the screen shows nature, for the most part, doing fine" (Jones, Thomas-Walters, Rust, & Veríssimo, 2019: 3). We now see, therefore, that film producers are becoming more aware of the need not to exclude them completely (Soppe & Raissa , 2019; Horak, 2006). For example, in a recent interview David Attenborough made an explicit plea for changes to be made in order to save the planet (Hoare, 2021). And as two of BBC's program presenters says:

> Producers claim such series encourage conservation – but in fact their brilliance and beauty breeds complacency about our destruction of the planet …. The justification, say the programme makers, is that if people become interested in the natural world they will start to care about the natural world, and will be more likely to want to get involved in trying to conserve it. Unfortunately, the scientific evidence shows this is nonsense …. (Howard, 2015; Hughes-Games, 2017; Plunkett, 2016 as cited in Soppe & Raissa, 2019: 90).

Usually the people who tend to watch such programs are already involved and care about the environment (Jones, Thomas-Walters, Rust, & Veríssimo, 2019), and are already predisposed toward nature love. There are many people well aware of them and will criticize them as more scholars are discussing this issue. A recent article discussing the Netflix series *Our Planet* (2019), sheds light on how it addresses environmental problems. The authors claim that *Our Planet* talks about the threats to species and ecosystems more than the last three BBC-produced, high-budget nature documentary." However, the new technology here does not seem to have made any changes, as in *Our Planet* (2019) they referred to these problems only verbally, which is not very different from others. As one commentator noted 'with the sound off, viewers could easily think they are watching *Planet Earth* from a decade earlier (Young, 2019 Cited in Jones, Thomas-Walters, Rust, & Veríssimo, 2019).

ii. Blue chip renaissance and its features

Recently, one scholar of the genre has argued that a "blue chip renaissance" is happening (Louson, 2018: 15). For her, the main feature characterizing this renaissance is the spectacle, which has three main features (1) technological innovation, (2) high cost, and (3) extensive co-production partnerships. (Louson, 2018: 20, 21). These features could be found in the Netflix sample I have viewed. Netflix continues to increase the amount of money spent each year on its production, which means bigger budgets and better access to the latest technology. For example, $17 billion was budgeted for the year 2021, meaning that they can finance the most expensively produced films that employ the most expensive technology (White, 2021).

First, starting with high cost that led to employing the most advanced camera technology, and that has led to spectacular visuals that are the main feature of a blue-chip renaissance, and that are intended to generate wonder and awe in the viewer's mind (Louson, 2018: 34). Unlike in the previous decade, new technical innovations allowed wildlife filmmakers to film with the highest camera definition that produced greater image resolution (Louson, 2018: 21). So, most natural history films now are shot and available for streaming on Netflix up to 4k Ultra HD, such as *Our Planet* (Cohen, 2019), which is also accessible to home viewers due to the adoption of HD cable television (Louson: 2018, 21).

Second, the market preference has an important role in films we see because making profit is important. Changes in natural history films, however, are not just related to new technologies. Changes are also related to how and what the filmmaker will do, to make sure he got the necessary funding. That mean that even if the technology permit them to make different films which is related to the market preferences as some of them adapt to some moral position so they could be sold to the market and attract an audience (Ganetz, 2004; Soppe & Raissa , 2019). For example, people's attraction to 'charismatic megafauna' affects their portrayal in films and how frequently they are shown. So, the changes of stories told and

how animals are perceived in natural history films are not only related to technical innovation but also to market-driven preferences, what people want to see, the stories and narrative conventions that are known and satisfying for them from the contemporary film genre.

In addition, Anthropomorphism, as discussed by Ganetz and Mossner and others, proved to be successful in attracting audiences, and is used to make them respond emotionally to non-human characters, often by employing some characteristic of fictional characters, as when an animal becomes a protagonist and the hero of his journey such as in the *March of the Penguins* (2005). This film, as some critics argued, followed the 'anthropomorphism standard' (Ivakhiv, 2008; Mossner, 2018) to engage humans emotionally with animals, and was a worldwide success.

Still, there are other means to engage humans with animals. Filming techniques such as close-ups are known to achieve that purpose (Horak, 2006; Mossner, 2018). Bousé (2003) refers to this, however, as a "false intimacy" that is created through close-ups on animals to engage viewers emotionally, and create an unrealistic relationship and feeling of involvement with them. As Bagust says "steering the nature film towards the conventional structures of 'regular 'genres like comedy, drama, melodrama and tragedy, but with animal, not human, protagonists." (Bagust, 2008: 218).

Anthropomorphism is often said to have begun with Disney films that proved to be a box office successes (Ganetz, 2004; Bagust, 2008; King, 2014). "The longer the public was exposed to the Disney model of 'documentary 'the more, it is reasonable to propose, they came to expect this kind of dramatized behaviour and narrative from animal subjects." (Bagust, 2008: 218). So, some say that Anthropomorphism is today so institutionalized in natural history films that it seems 'natural" (Ganetz, 2004: 206). Others note that with new technology, "the Disneyfication of animal images through extreme anthropomorphism

continues unabated and in fact has been naturalized through new digital technologies" (Horak, 2006: 473). Yet that may not be true and it needs as there are many new natural history films that needs to be seen to know if their argument still hold truth to it.

iii. Manipulation and fakery for better engaging experience

Viewers 'emotional engagement is seen as very important and needed to hold their attention. There are different ways to achieve it, but there are some people who go to the extreme and use manipulation and fakery in order to provide an engaging experience (Mossner, 2018: 173). This was widely seen in Disney's "True Life Adventures series." In one incident, they used a wire cage enclosure with a glass barrier separating two animas to obtain shots with the two animals in the same frame. And it may be justified in some situations, as Palmer says (Barley, 2010). Fakery in natural history films was discussed by Collins (2017) in relation to sound effects and techniques for achieving cinematic realism. He discusses some history until we arrive at *Planet Earth II* (2016), in which the most advanced equipment and techniques were used. These included ultra-HD, infrared camera traps, heat-sensitive cameras, drones, and others. The sensitivity of the camera, as Attenborough says "transformed natural history filmmaking" (Collins, 2017: 67). This magnificent footage can be seen on a big television screen "by 2014, 63 percent of TVs sold had at least 40-inch screens" (Ritcher, 2015, as cited in Collins, 2017), and are capable of 4k and high dynamic range which result in cinematic visual quality. *Planet earth II* (2016) in its dramatic and cinematic aesthetic proved able to attract a younger audience. Collins concludes that what people think is fakery is just them failing at understanding the reality of natural history films, as it is a mix of fiction and reality.

Nowadays, however, with the decline in numbers of so many species, the desire to document nature is increasing with each passing year, "Every moving image can potentially be the last

“living" image of a species, in the truest sense of the word.” (Horak, 2006: 459). Some claim that this has changed the way things are done, that kind of manipulation and fakery is still done as before, or that new filming techniques have helped obtain different kind of footage that were once staged. And with the claim of different kind of stories being told, is there still use of anthropomorphism in structuring a familiar storyline for the audience?

Other, scholars and film theorists such as Karen Collins, Phill Bagust, Lucas Hiderbrand and others talk about the changes in the natural history film genre, and refer to the technological innovations as a way to help this model to be produced. They talk about HD and Ultra HD and other advances, and their effect on natural history film, by making them look more vivid than ever. As a result, it leads to more questions concerning their “reality.” How can the viewer, especially now with all the environmental problems, take them as the window onto nature, if they show only its unharmed side? Documentaries are presumed by many viewers to be “a window on the world, a portrayal, however selective, of something quite real” (Ivakhiv, 2008: 4). Even though, as Ganetz says, Natural history film “still does lean – heavily against science to substantiate its aura of authenticity, which has been, and is still is, so fundamental for its claims to realism, didacticism, and objectivity.” (Ganetz, 2017: 198).

Ganetz argues that as soon as someone depicts natural history with technology, it is not representing only nature any longer, something is taken away in favor of culture. Today with the technology used, filming techniques are made invisible for the viewer unlike the decade before, “The visible technology is here a sign of realism, underlining that ‘this has happened and is true’. This kind of realism seems antiquated to-day: instead, at the moment, it is sophisticated, hidden technique that can sneak close to the animals that signals realism.” (Ganetz, 2004: 205). This work of reproduction of nature, like art works, lose something essential when we encounter them not directly, but mediated as images as Walter Benjamin

famously argued (Benjamin, 1969). So, encountering works of art as mass-produced and distributed images in books, magazines and elsewhere, changes our relationship to them, and robs of them of their original power, because the experience of art is reduced and degraded in the process and the artistic function is reduced . The same can undoubtedly be said of encountering nature and animals as images on screens. The experience may be reduced and degraded in the process. However there is still some research that proves otherwise, such as a study done on the effect of watching *Planet Earth II* (2016) which show an "increase in feelings of awe, contentedness, joy, amusement, and curiosity, but also that it acted to reduce feelings of tiredness, anger, and stress" (Jeanine Young-Mason, 2020).

Corner considered that the overwhelming response to technology, such as smaller cameras and other changes that happened affected all documentary genres, as well as natural history films, and it made documentary more reflexive, "showing its hand" to the audience (Corner, 1996 as cited in Bagust, 2008). Now, with much more sophisticated techniques, things may have changed as the barriers between objective recording and popular entertainment collapsed (Bagust, 2008). But still as Vinicius Navarro says:

> The technology itself enters the picture as a sort of bridge between tradition and change. It is never just a vessel for an established media format; neither does it announce a complete departure from the past. (Navarro, 2015: 41)

Accordingly, advances in technology do not necessarily mean a departure from history, neither does it mean creating a totally different approach by establishing new models of storytelling, narrative convention, and other things discussed earlier. In contrast, it may be a way to enhance or recreate old natural history film that were already done using older techniques. Stories that were filmed many years ago can now be filmed again but with a new feeling with the helping of the new and improved filming techniques (Walsh, 2016).

Some filmmakers expressed in a way the same opinion of the new technology that emerged in nature documentary as they said it will help them to tell the same old stories but in a new way. Wildlife cameraman Ed Charles says "Stories that were done for *The Life of Birds*, for example, almost 15 years ago, we can film again but bring a totally new feel to it" (Walsh, 2016).

Some have argued that new productions, such as *Planet Earth II* (2016) and other nature programs produced by BBC Natural History Unit are perfect examples of Blue-Chip filmmaking. As it has a high budget production and it creates wonder in how they depict the natural world (Soppe & Raissa , 2019). They are better suited to HD and large format screen (Bousé, 2000: 18). To point out small TV screens used to be before, when television was largely a close-up medium, it required more frame-filling images so the viewer could see them clearly with the small screen. Now, with larger screen and Ultra HD filming, things may shift in favor of different kinds of shots, as subjects can be seen clearly without the need for them to fill the entire frame. Natural history films have thus seen a "revival of the high-profile documentary production from mid-century, with enormous budgets, lavish visuals, star-studded narration, and a return of the traditional natural history documentary format" (Louson, 2018: 16).

Taken as a whole, it is clear that natural history films are benefiting *visually* from all the advances in technology. The question is if changes are occurring in the stories that are told, or in the way these stories are told, and therefore in the way animals are perceived and understood. Given the claims to that effect by so many people in the industry, there seems a need for a study such as this one to see if, or to what extent, that is true. And how the viewing public's relationship to nature may ultimately be at stake, depending on how natural history films are presenting an image of nature to the viewer, and the importance of this image as the viewer may consider it as the ultimate truth. So, a study as this one need to be

done in order to know if it is true that natural history films are internally affected by the advances in technology and how that is transmitted to the audience that seeks to see nature through these films.

METHODOLOGY

To address the question of whether significant changes in filming technology in recent years have led to significant changes in natural history film storytelling, I will be examining a sample of 30 films, all from the Netflix streaming service. Although this is a 'sample of convenience,' it is justified by the fact that Netflix has a huge subscriber base, and is the most popular streaming service in 94 countries (World Map Reveals Every Country's Most Popular Streaming Service, 2021), with the largest audiences of 213 million global subscribers (Littleton, 2021). Yet, it is important to point out that this sample have its limitation because Netflix has such big audience and so mainstreamed, it is less possible to find experimentation going on, so the sample itself will be a limitation, but at least it allows for some coherence. Which means I don't anticipate a lot of experimentation in these films. Also, I am aware that by choosing this sample my expectation in films will be fairly conventional and perhaps less likely to yield big revolutionary changes because Netflix is aimed at really mainstreamed audience.

This group of wildlife/natural history films are more to be seen and attracted the viewer than the ones that are more 'scientific' in theme and approach. As it is widely known (as discussed earlier) that dramatic story lines and narrative conventions attract and hold viewers' attention. This is proven by example by the success of *Our Planet* (2019) on Netflix that had the biggest number of viewers "Netflix's most-watched original documentary, viewed by 33 million people in its first month" (Armstrong, 2020). So, Netflix can attract a big number of viewers globally, and with the increasing amount of money they spend every year on production, for example $17 billion for the year 2021 (White, 2021) they can finance the most expensively produced films that employ the most expensive technology.

I am going to watch the films available on Netflix under the category “nature and ecology documentaries”:

1. Puff wonders of the reef (2021)
2. Seaspiracy (2021)
3. Breaking boundaries (2021)
4. Meat hunter (2021)
5. Animal (2021)
6. Penguin town (2021)
7. Magical Andes (2021)
8. Life in colour (2021)
9. Night on earth (2020)
10. Night on earth: behind the scenes (2020)
11. Down to earth with Zac Efron (2020)
12. Tiny creatures (2020)
13. Aliens’ world 2020
14. Absurd planet (2020)
15. My octopus’s teacher (2020)
16. David Attenborough A life on our planet (2020)
17. Brave blue world (2020)
18. Kiss the ground (2020)
19. Night on earth shot in the dark (2020)
20. Dancing with the birds (2019)
21. Inside bill’s brain (2019)
22. Our planet: Behind the scenes (2019)
23. Our planet (2019)
24. 72 dangerous animals Asia (2018)
25. Tales by light (2018)
26. If I were an animal (2018)
27. Untamed Romania (2018)
28. The most unknown 2018
29. Islands of faith (2018)
30. Birders (2018)
31. Pacificvm (2017)
32. 72 dangerous animals Latin America (2017)
33. 72 cutest animals (2016)
34. Minimalism (2016)
35. The ivory game (2016)
36. A plastic ocean (2016)
37. Mission blue (2014)
38. Virunga (2014)
39. Mission blue (2014)

The sample will be Netflix’s films as they stood on a certain date (2021 to 2018), so I am going to exclude the films that were made before 2018. Acknowledging that some of the

most popular films, that would have been useful here, were simply not available on Netflix to watch.

I decided to include films about underwater sea creatures because I intend at this point to make no distinction between underwater and topside films. I decided in this analysis to include films about underwater sea creature because I am making no distinction[5].

Pointing out that other scholars have already documented and made clear that natural history films from earlier decades did make extensive use of Hollywood devices, I don't need to include it. What I have done is to look at new films that earlier scholars did not deal with because all their books come out 15 to 20 years ago.

So, based on all I have read, as described earlier, my analysis addresses the following questions. (1) What *kinds* of stories are now being told? (2) *How* they being told? That is, have significant changes occurred after the recent innovations in filming technology? (3) Are protagonist-centered stories still being told? (4) Are these stories being told in the same way? (5) Are the traditional cinematic storytelling and editing conventions used? (6) Have new models emerged? Additionally, (7) how environmental problems are being addressed? (8) Is there still a degree of manipulation of artifice as in earlier decades?

Lastly, I have also evaluated the films with regard to how prevalent certain formal devices are. The approach here consists mainly of close viewing to identify specific patterns. The analysis of the viewing is perceptive rather than 'statistical,' qualitative rather than quantitative.

[5] These two types of films operate by different codes and conventions (Bousé, 2000), but for the purpose of this analysis, I don't think that this is an important distinction.

RESULTS

i. Blue-chip renaissance

Most of the natural history films I have viewed fulfill the characteristic of the older "blue chip" type of wildlife film, which corresponds to the same point Louson made (Louson:2018, 17). Despite the high-profile production of the mid-twenty-first century, half of them still depict most of the traditional blue-chip film characteristics, especially when it comes to the visual splendor, dramatic storyline, and downplaying of environmental problems in favor of not losing the viewer's attention (Bousé, 2000: 1). Instead, they focus on the unharmed, still spectacular part of nature and wildlife, although, as Louson says "This spectacular imagery has a high price tag" (Louson, 2018: 24). Now with streaming services that allow us to watch anywhere we want; it seems producers are focusing even more on generating 'awe 'to retain viewers 'attention. Louson argues" it was difficult for film producers to make money unless they first spent it, precisely to obtain the spectacular visuals." (Louson, 2018: 24).

Today, it can be said that filmmakers in new natural history films are using new technologies such as Ultra HD cameras, drones, advanced microphotography cameras, and night vision, making possible the blue-chip renaissance by helping depict spectacular images of nature as never seen before, Yet, at the same time, these spectacles often appear to tell the same stories as films in the past, unlike what Producer Gavin Garrison says regarding the possibilities that new advances such as drone cams could offer, "I have high hopes that drones will help us craft narratives that continue to surprise and delight audiences around the world." (Garrison, 2017). This can be clear while watching two of Netflix's newest productions, *Animal* (2021) and *Surviving Paradise* (2022). They depict wildlife using the newest filming technology that leads to a crisper, more detailed and colorful image. *Animal (2021),* for example, took

advantage of technologies like 4k and HDR which lead to the colors to pop and the details to be crispy and stand on their own (Keller, 2021), especially in close up (Figure 10). Some have called these technological advances "revolutionary." As Ed Charles says, "there's been a revolution in technology, drones have revolutionized the way we can do a lot of stuff (Walsh, 2016)" Yet it can be said that drones did not bring any particular change in the kinds of stories that are told, unlike what Producer Gavin Garrison says about the new possibilities that it could offer. In *Animal* (2021) and *Surviving Paradise — a Family Tale* (2022), drone footage is used to portray the beautiful nature in steady cinematic shots, more than standing on its own to show a complete chasing scene for example. Yet what makes this footage delightful for the audience is not the new narrative that is said drones help to craft but rather the magnificent aerial footage that it can offers, especially in *Surviving Paradise --A Family Tale* (2022) that offers us different footage of spectacular shot of herds traveling, for example (Figure 12).

The same argument regarding spectacular images applies to *Dancing with the Birds* (2019) which gives a spectacular look at individual male bird dancers who are competing to present the best dance for the nearby female watching to attract them as their mate. We get to see them in an image that is detailed, clear, and vividly colorful where the different colors of a bird are vividly displayed (Figure 13). Also, we get to see them from a closer perspective while they are acting their dance, which is made possible through the use of a spy or hidden cam (Figure 14) that enables us to get a closer look at them while at the same time not causing them a disturbance that can affect their natural behavior. These shots from hidden cameras are included with other shots of the birds as they dance. Also, in *Penguin Town* (2021), spy cameras are put in different locations to film penguins at any time such as in their nest or close to it (Figure 15).

Figure 11

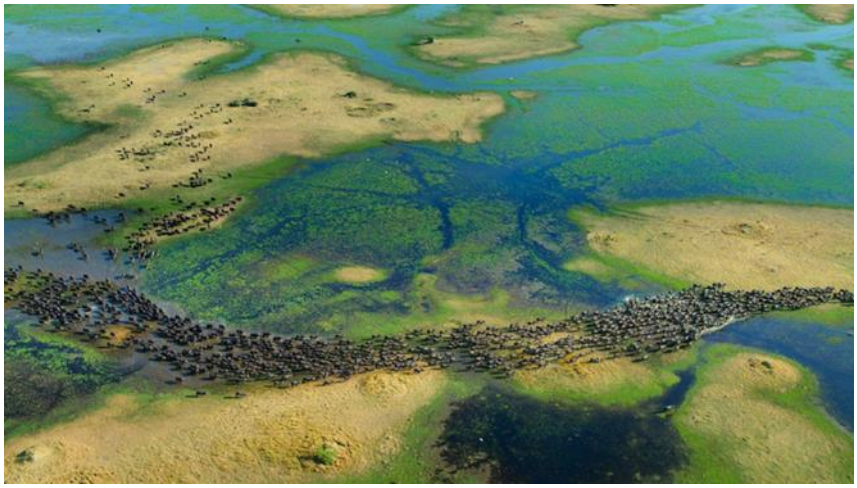

Figure 12

Figure 13

Figure 14

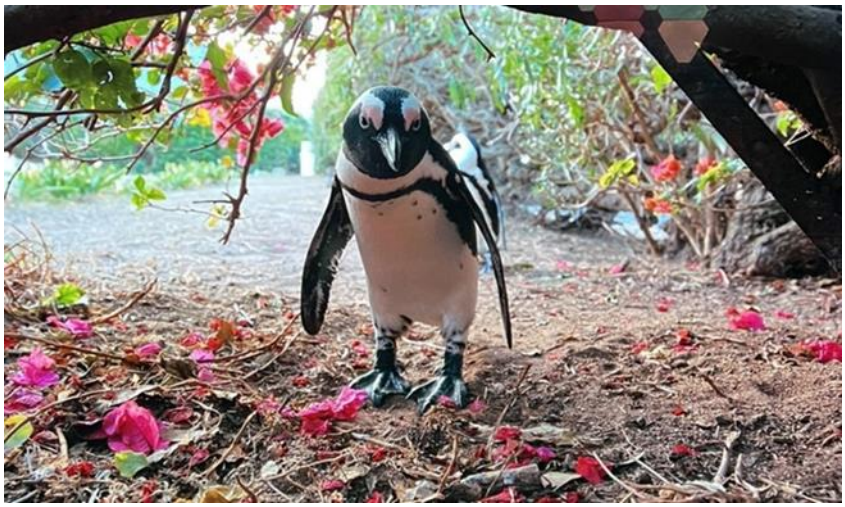

Figure 15

Yet, here in such an example, it can be said that Spy Cam offers an easier way to get animals shots, closer to them with less disturbance, but these shots are used to tell the same stories as films in the past. There are, however, some exceptions where drones and Spy Cam helped in offering new stories or perspectives. For example, in *Night on Earth* (2021), Spy Cam helped capture shots of an elephant and her calf and shots of a Leopard while they move at night in the city.

Other techniques add to the wonder that is created through new filming technology, such as the heavy use of slow motion, as in the opening shot in *Animal* (2022) which portrays various big cats moving through their habitats. Unlabeled slow motion seems to be used in most films I have viewed many times, for simple acts such as when animals walk, blink, and other simple animal behavior to add a dramatic effect (Figure 16). In a scene of an elephant trying to knock down some fruits from a tree, we see his act slowed down while the fruits fell to the ground. This also leads to a more detailed image that will make the subject look even bigger on the screen unlike how people perceive it in real life. As Boswell argues "the slower an animal moves, the larger it appears, "(Bousé, 2000: 12).

So, it seems all these techniques used are in favor of spectacle by showing an image of nature more enhanced than ever. This act is considered by Louson as a part of the blue-chip

So, it seems all these techniques used are in favor of spectacle by showing an image of nature more enhanced than ever. This act is considered by Louson as a part of the blue-chip renaissance to enhance the "education" about wildlife by offering an experience of nature that is emotional and likely to be seen and experienced only through the technical means because this is not how we experience nature in real life (Louson, 34).

While new filming technology has led to better image quality, the same story models from older blue-chip films are used. The themes and sub-themes mapped out by Norfelt (1993) are

Figure 16

largely still the same; nothing really new has emerged. One of the most popular thematic categories, such as the year-in-the-life storyline, is seen in films such as *Surviving Paradise--A Family Tale* (2022) where we are taken on a journey in the life of a lioness, a pack of painted wolves, and a newborn elephant as they attempt to survive the danger of their world with an emphasis on strong "family" relationship and its importance for survival. The same thing goes for *Untamed Romania* (2018) which portrays the natural beauty of Romania over a year going through the four seasons. Another theme is "family" that exists in *Animal (2021)* where each episode follows species that belong to the same family (big cats, Dogs, Marsupials…).

Also, the territorial model is another common theme that is still used today in films such as *Our Planet* (2019) and *Night on earth* (2020) where each episode focuses on a territorial place such as Jungle, desert, and our newest habitat- cities.

Yet, there are still some exceptions regarding the effect of new technology on stories, first for what's is new, starting with *Life in Color* (2021) and *Night on Earth* (2020), because even if they are still traditional blue-chip films, they have made use of technology to tell in a way new stories that were not possible before due to the lack of necessary technical equipment needed. In *Life in Colour* (2021) they use specially developed cameras to bring us the "animal vision" by overlaying polarized and UV optics onto "human vision" footage (Ramsden, 2021) (Fgure 17). This is new as they tell and show stories of how animals use color to communicate, attract and hunt predators (Figure 18). Innovative camera technology, some developed especially for this series are what permitted these stories to be filmed in an innovative way as per Inews David Attenborough says " the concept of *Life in Colour* was originally pitched by Attenborough in the 1950s but was shelved due to a lack of technology" (Ramsdeb, 2021). So, through this innovative camera work, we are able to see from the perspective of animals how they perceive the environment around them and how it

affects their ability in surviving. Bees, for example, process blue, green and UV light which enables them to find the richest nectar spots and it us used to film butterflies (Figure 19). this supports the spectacular images caused by new techniques as we can perceive in this film colors as never been seen before especially since humans can't see polarized light. So, enhancing the color experience for viewers generates more awe. As Attenborough says, "For us, color in the natural world is a source of beauty, of wonder, but for animals, it's a tool for survival." (Ramsden, 2021).

Another film, *Night on Earth* (2020) used cutting-edge low light photography, high-definition cameras, military-grade thermal-imaging equipment and lenses mounted to drones

(Holbrook, 2020) as well as ultraviolet cameras that are sensitive to moonlight and can track heat (Greene, 2020)to capture evening activities of animals in different habitat from sundown to sunup. These new and advanced technologies enabled them as Bill Markham, Plimsoll's series producer for *Night on Earth* says to capture new stories, "So many animals have been so well documented. What new technologies bring us is the chance to tell a new story, because it can capture details – sometimes whole behaviours – that haven't been seen" ("Shot in the dark," n.d.). .). For example, night vision offered the possibility to see a family of owl monkey that is "rarely seen, let alone filmed" just waking up then the camera follows how they operate at night, also capturing as the narration points out: "something completely unexpected", great apes that are feeding at night is unusual and "it's never been caught on camera" (Figure 20).

What's more, a new thing that new technology offers through the new lenses, cameras, and post-production technologies is allowing scenes filmed after sunset to remain vivid and colorful. For example, Netflix used a similar ultra-sensitive color night vision camera to film the flamingos at night.

Figure 17

A fiddler crab is seen in normal (top image) and polarised light (below)

Figure 18

Figure 19

Figure 20

Yet, what is not different is that despite some of the new behaviors shown, most of the stories are not new such as in the “Frozen Night” episode, in which a low light camera shows how a mother polar bear faces the struggles with her two cubs to find shelter and food at night. The new thing is the ability to film them in such high resolution, unlike a decade ago when filming at night used to need artificial lighting which will lead to altering natural behavior (Turner, 2018). New camera techniques such as drones, spy and spy cam sowed mostly the same behvaviors and were integrated in scenes that depicts the same story models such as the year-in-the-life storyline that is seen in *Puff - Wonders of the Reef* (2021)

making.” (Movidiam, 2016). So, advances in camera techniques as they said can lead to new stories “It allowed us to tell that story, which was untellable without that technology” (Nguyen, 2015), such as *Life in Colour* (2021). Yet as it seems, old stories of natural history films are being told again but the difference is with much better image quality that is colorful and cinematic focusing more on the animal’s perspective, all in the result of new technology that offers the opportunity to film behaviors again but with the clearer image as Scholey says. “There’s a little bird of paradise called the Western Parotia, and [its mating dance] has never been filmed [in this quality].” (Hogan, 2019). So, this spectacular image of nature is what characterizes the blue-chip renaissance that was made possible through new technology.

So it may be said that the revolution that some claimed to be occurring because of new technology for example, regarding “more ambitious stories” (Nguyen, 2015), did not extend to the creation of new narrative structure, different stories or story models that don’t follow the old models, as some proclaimed.“ The advances are endless and relentless but there has been some specific stand out developments that have completely revolutionized wildlife film

ii. Dramatic narrative

The early history of Motion pictures showed a quick development into a predominantly narrative medium (i.e., focused on telling stories), and natural history films were no exception to this, but they became codified as a narrative genre of their own as a result of Disney's thoroughgoing application of Hollywood narrative conventions to them (Hilderbrand, 2010; Horak, 2006), so it becomes a combination of human culture that affects stories and how they are told. Not forgetting that dramatic narrative is a part of the entertainment that this genre follows, "revelation that moving images of wild animals could be thoroughly integrated with narrative conventions from mainstream Hollywood films—formal devices, plots structures, situations, themes, motifs, and character types" (Bousé, 2000: 68).

So natural history films either broadcast on television or streamed on small electronic devices through online services such as Netflix, always seek to bring the audience closer to nature by telling engaging, emotionally compelling stories. People in the industry try to take advantage of new technologies to tell these stories. As Chadden Hunter, producer of the "Grasslands" episode of the BBC's *Planet Earth II* says," There are all sorts of natural history stories that we thought were impossible to film, so now we're scrambling out to get them." (Fong & Lee, 2017). High-budget, high-tech films might tend to focus more on the entertainment part, downplaying the focus on the education part that can be more scientific driven than the entertainment and attract more audience, which is important to make a profit (Bousé, 2000: 85).

In older natural history films, while technology was still advancing, images of nature did not have the best quality for viewers to observe wildlife, and it was not until the period 1907 to 1910 that a new 230mm camera lens came to market enabling filmmakers to obtain belter

quality wildlife shots (Petterson, 2011: 97). Now, however, with the degree of advances that new technology has achieved, films are shot and streamed in very high quality, and spectacular images of nature may stand on their own as a form of attraction in experiencing nature.

This shows that Tom Gunning and Andre Gaudreault's notion of the" cinema of attractions", referring to the early, pre-narrative years of cinema, when the focus was on the spectacle, on the audience's visual experience, rather than on telling a story, (Strauven, 2006: 71, 393), is relevant when applied to today's natural history films. As discussed earlier, this is done by advancing technology that shows an idealized spectacular image of nature. It may be argued that this form of attraction has returned by experiencing nature through images that are very sharp, detailed, and colorful, to attract viewers 'attention. Yet despite this spectacular image, it can be clear from watching a new natural history film that dramatic narratives are as important as before and run alongside spectacular images to engage the audience, as stories that were the foundation of a film are now told again in a 'clearer 'format.

First, most films I have seen still rely on a dramatic narrative that speaks to the viewer's emotion, for example, in *Penguin Town* (2021), *If I Were an Animal* (2019), *Tiny Creatures* (2020), and others. In *Penguin Town (2021)*, nine filmmakers used nest cams, drones, waterproof cameras, and other special equipment to capture images of the penguins. They applied a constructed narrative on the penguins, in which each group has its own story and back story, and is faced with different dramatic circumstances, for example, the difficulties to protect their egg in bad weather and their fight for its survival against the heavy rain and other bad penguins. Also, each episode ends which a drama cliffhanger where something dangerous happened to the penguin family that leaves us hanging to know what will happen to them next.

Tiny Creatures (2020) is no different, but it even went beyond *Penguin Town* in its dramatic narrative to the degree of staging every scene so they could build a narrative. Each episode tells a different story about the lives of an animal in a dramatic narrative similar to a feature film. "There's nothing else like it around. It's not a documentary and it's not completely fiction. I call it an animal drama" (Pennington, 2020). The stories tend to follow a classic three-act structure, with dramatic climaxes and satisfying resolutions (Bousé, 2000: 16). In telling the stories of a squirrel, for example, he is seen departing from his home to go on an adventurous journey, and in the end the return in triumph. This reinforces what was said before on natural history film, that entertainment leads to more manipulation and staging, as it is a fiction genre rather than a documentary (Bousé, 2000: 85). This protagonist-centered narrative structure is also found in other recent films such as *Puff: Wonders of The Reef* (2021), which depicts the "hero's journey" model outlined by Joseph Campbell (Bousé, 2000: 130), where we follow the journey of a fish called Puff in his rites-of-passage journey toward finding a new home.

Other films follow the story model of territorial categories, resulting in *mega-series* with high budgets, such as *Our Planet* (2019) and *Animal* (2021), although these still rely heavily on dramatic narrative in telling stories of animals 'survival, hunting, and others, to hold viewers ' attention despite their high budget that leads to "visual splendor." For example, in *Animal* (2021) we follow the journey of a Kangaroo named "Joey" from the moment he is born, and the danger he faces against predators.

Overall, dramatic narratives have always been a part of this genre, and it seems they will continue to play an important role even with the advances in technology that may have opened new possibilities in filming. It seems there are little to no exception from the sample I have chosen, even if some films may be more scientifically driven than the others. Dramatic narratives are still needed to create an engaging film.

iii. Anthropomorphism

Anthropomorphism means assigning human feelings, emotions, and culture to animals. In natural history films, this can lead to an unreal image of animals and nature. It can "mock, educate, moralize and entertain," all at the same time (DeWaal, 2000: 54). It is often said that anthropomorphism in these films began with Disney. It proved to be a formula for box office success (Ganetz, 2004; Bagust, 2008; King, 2014), that was influenced by culture's myths and tales that humanized animals or teach moral lessons (Bousé, 2000: 92, 128). Later on, viewers started to get more exposed to it and expected this kind of dramatized behavior (Bagust, 2008: 2018). Today, some say that anthropomorphism is so institutionalized in wildlife films that it seems 'natural' (Ganetz, 2004: 206).

Anthropomorphism is still present in approximately half of the films I have watched from the selected sample. First, this is done by attributing, verbally through narration, human emotions to the animals presented. *Tiny Creatures* (2020), for example, anthropomorphizes by attributing human feelings and characteristics to each of its characters, describing an animal's action as a superhero's powers. Even the director of *Tiny Creatures* said it himself: "It's very anthropomorphic. We put human emotion into the animals, we tell the audience they are feeling sad or feeling happy" (Moore, 2020). So, the use of the new technology such as shooting in 8D, drone shots, and using the best resolution camera slow motion, all filmed in "the highest resolution possible" (Pennington, 2020), and all in favor of connecting humans to animals emotionally. "You're able to push the natural history genre . . . towards a more fantastical story. You can be on the shoulder of these animals and feel what it's like to run the gauntlet of their everyday lives" (Pennington, 2020). For example, in one episode a hamster navigates the bustling streets of New York City, facing the danger of people and cars.

If I Were an Animal (2018) focuses on family topics included as a part of animals ' relationships. In each episode, there are about three species presented by the two kids who are narrating the story. They give names to the main animal characters from a fox named Elliott to a dragonfly named Lulu, and we follow them through a journey as they go from birth to adulthood, which is an example of the "rites of passage" narrative pattern (Bousé, 2000: 131). The relation of the animals with their surrounding is explored both visually and verbally. The narration tells us what they are feeling or their characteristics, for example, "she's so funny," and they associate human family values with their relationship.

It could be said that anthropomorphism here may be used because this show is narrated by kids for kids to help children understand their own growing up as it shows from its age rate of 5+ years. So, animal relationships start to be "as models of responsible parenting and family values." (Chris, 2006: 159)

Also, anthropomorphism and the subject of family are dealt with in *Penguin Town*, where there is a treatment of a different group of the penguin family. Each one is given its own name and characteristics, for example, there are the Bougainvilleas, married penguins who live in the 'suburbs,' and Junior, a two-year-old troublemaker, on his journey to manhood, and others. We follow them in their journey of marrying, laying their eggs, and raising their kids, and face struggles especially against a crew of penguin bullies that they called "the car park gang." This recalls Cherry Kearton's anthropomorphizing in *Dassan* (1930), in which automobile sound effects such as honking horns were added to footage of penguins for 'comic 'effect (Bousé, 2000: 60).

The narration is light and humorous but at the same time it sheds light on important matters, while at the same time using anthropomorphism to find a balance with reality while telling a story." Going down there and seeing how fun the penguins are… how relatable they are, we knew that we would have to get the conservation message across and get people to care a lot

more," said Christos (Evans, 2021). She said she thought people got tired of hearing bad news so they did not want to switch off if they approach the subject more scientifically. Instead, they chose to make people connect emotionally and care for the penguins. "So how do you keep them engaged, get them connected, make them care without making them switch off?" (Evans, 2021). Anthropomorphising is a way to do this.

While anthropomorphism still exists in about half of the films I have seen, the other half doesn't attribute human emotions to animals. These films tend toward the story model of territorial habitat. Still, in some few cases, they do name some of their animal subjects, although these tend to be exceptions, as in one episode of *Our Planet* (2019) in which they named two of the animals 'Louis 'and 'Plutos', although without attributing human feelings and emotions to them.

Overall, it can be said that anthropomorphism exists especially in shows that are directed to children, so they can connect and understand them, but it is seen less in territorial story models.

iv. Formal Aesthetic

Natural history films have 'reality 'as their foundation, yet there is also a series of formal aesthetic interventions that has always been a part of them. These reflect the dominant formal paradigm of Hollywood cinema, as seen in conventions such as continuity editing, close-ups and point-of-view shots, shot/reverse-shot structure, and others. Bousé suggests that wildlife films are even more 'cinematic' now, "with screens that were larger and clearer, it seemed that the need for frame-filling facial close-ups could be reduced, as images of individual animals could be large and clear without having to fill the entire frame" (Bousé, 2000: 188). This argument could be discussed today, especially with the newest camera equipment that

films in 4k and with the TV screen that supports this quality and format. The images of wildlife are indeed clearer than ever with the newest advances in technology, but that did not reduce the frame-filling with close-ups which it seems are still as important as before because it is for TV and the screen is small compared to cinema. Continuity editing is seen when several close shots of animals 'faces and other parts of their body are routinely edited together in one scene. For example, in one of many scenes in *Animals* (2021), different close-up shots are edited together in the same sequence of the kangaroo as he jumps, a match-on-action, so the kangaroo can be seen in a short time from many different angles.

That leads us to an argument that at the end of the 20th century the pace of cutting had increased, turning "[nature's] stillness to rapidly cut montages" (Bousé, 2000: 191). Now, however, with technology-enabled stabilization, steady shots are longer than before through the use of drones that can follow the action in one continuous shot, which may lead to longer shots instead of breaking down the scenes in many different shots. Yet, from watching recent films, it may be that this is not what is occurring. Despite the existence of drones, they did not offer any significant change in regard to directorial decision to show a whole scene of chasing from an aerial view. Drones can offer not only a spectacular image in high-resolution, but also respect the privacy of animals by filming quietly and discreetly, capturing natural behavior without scaring animals with the noise that helicopters produce (Louson, 2018) (Figure 22)

Yet the discussion here is about how drone footage is used in post-production, where shots are edited with others from different angles to create, for example, a scene of an elephant family traveling together, shown through aerial footage, ground-level close-ups, and other types shots, with a bit fast cutting among shots from different angles.

This structure points to the continuing influence of feature film editing on natural history film, as the Hollywood editing techniques used to maintain temporal and special continuity are still followed.

Footage filmed by new advanced technology such as Spy Cam, Critter Cam and drones are used as part of this continuity in films. Techniques such as connecting glances, matching action, the 180-degree rule, consistent screen direction, and shot-reverse-shot are still employed and respected in this genre.[6]

Despite techniques such as shot/reverse-shot could be less used for the same argument discussed before, saying that clearer and bigger TV screens could lead to less reliance on close-ups because for this case it could be argued that the frame could contain both animal subjects. However, I noticed such techniques are still frequently used either for the dramatic narrative or as a way for constructive editing such as in *Tiny Creatures* (2020), where they tended to film each animal alone and then join the shots in the editing.“ We filmed the hawk and worked on its eye-line direction so that it was looking down. That footage was not very dramatic but when you put together the hawk looking down and the rat running you create a different scenario” (Kozma, 2020). Also, in *Untamed Romania* (2018) the artifice is visible in a scene, for example, where they show a kill scene by joining different shots of an eagle and a hare that were clearly filmed separately and then joined in the editing. This pulls the film away from documentary and more toward-Hollywood style dramatic construction. That can be noticed in most of the films I have viewed.

[6] Robert B. Ray in “A Certain Tendency of the Hollywood Cinema” (1985), mentions these techniques to maintain temporal and special continuity. Karel Reisz and Gavin Millar in “Technique of Film Editing” (1978), discuss them as some of the main editing techniques used in the film to sustain a sense of continuity (Reisz and Millar, 1978: 222-226). David Bordwell and Kristin Thompson, in “The Classical Hollywood Cinema” (1985) discussion on the continuity system and the editing techniques used to achieve that continuity in films. Continuity is achieved both by matching the shots from one to another spatially and temporally to maintain one continuous action.

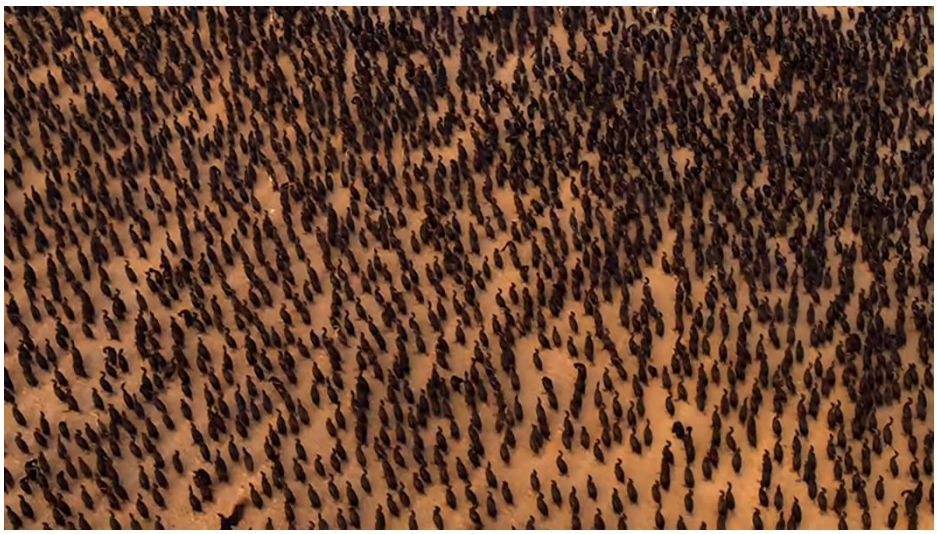

Figure 21

Yet, there are still some exceptions where new filming technology has offered an innovative way to film, for example, the use of drones in filming POV shots, which are one of the most common Hollywood techniques. It is commonly used in natural history films to promote viewers 'identification with individual animals (Warren, 2000: 62, 92). With drones, POV shots of flying birds could be easier to create a small drone are easier to control, and that can make POV shots more dramatic, for example, filming the POV of a flying eagle with drones give the shot a very similar movement to the way the eagle sees by the fast movement.

So, it may be argued that with more shots obtained from different angles through the use of Spy Cam, critter cam, drones, and other new and advanced camera technology, the fast-paced cutting may continue to exist in the twenty-first century, despite some new filming technology that could have slowed it down such as drones, in favor of longer shots especially with the much clearer and colorful images streamed on high-resolution services that can let the viewers observe the action clearly.

Overall it seems that new filming technology is offering more various shots from different angles and focal lengths that could be used on a constructed sequences in a linked way that offer both spatial and temporal continuity because it has always been known natural history film relies on the convention structure of mainstream cinema, As Parsons made clear, wildlife film codes owed more to mainstream narrative entertainment than to documentary (Bousé, 2000: 38), and new filming technology such as Spy Cam are working in this favor.

v. The influence of climate change and environmental problem on stories told.

One of the surprises that emerged in my analysis was the renewed and significant emphasis on environmental problems, in particular climate change because in recent year the topic of climate change was unavoidable and seems the problem of our age. As in the past one of the

main features of traditional blue-chip films are the absence of politics, the absence of historical reference points, and the absence of people (Bousé, 2000: 14-15). This is why they have tended to downplay the environmental problem, because if they did not, it will not be a blue-chip film anymore and will lean more towards becoming a science documentary. So, they usually tend to neglect issues that may turn the viewers off or prevent the sense of timelessness that could prevent selling the film again (Bousé, 2000: 15, 188). And in the age of HD with bigger and more visually powerfully screens that, as Bousé says,“ helped wildlife filmmakers lay a greater claim to the legitimizing mantle of art, but has also increased the tendency toward films that are guided by the demands of art, rather than by those of science or ecological concerns.” (Bousé, 2000: 188). As Mills (1997) reminds us, showing negative themes might drive audiences away. Yet, now we find in films such as *Our Planet* (2019), *Animal* (2021) and other much more emphasis on climate change as one of the main issues for animal survival

In the old days of television, it was easy to get data to know what kind of stories are succeeding with the viewers and which ones are making them change their channels (A.Fowler, 2019), yet now with streaming services it may be even easier to track viewer’s data with the availability of more option,“ what you watched and when you watched it, where you paused, where you stopped” (O'Flaherty, 2021). For example, “The streaming service will log that you binged every episode of *Breaking Bad* in a week and that you abandoned *Seaspiracy* after 20 minutes” (O'Flaherty, 2021). So, depending on these results from streaming services, producers know what viewers want to receive. So now producers can know even more about how mentioning environmental problems affect their profit, and this influence of climate change can be seen in viewing the new natural history films from the sample I have chosen. First, it has little to no effect on the stories told in half of the films in the sample, where they tend to ignore environmental issues, and instead focused on the

unharmed part of nature such as in *Life in Color (2021), Tiny Creatures* (2020), *If I Were an Animal (2018), Dancing with the Birds* (2019). Such films focus on the entertainment part of this genre by crafting narratives and stories and even using anthropomorphism to make viewers connect to them as discussed before.

This approach of making people care for nature is discussed in making *Penguin Town,* where the climate change issue has made it hard to neglect it. So, they tried to find a balance between the grim reality and the entertainment narrative they want to film, because at the same time climate change influence is a fact but now people are tired of hearing about time all the time "I think people have had a really hard year. Everybody's hearing about global warming, about fires, viruses, animals dying out, forests being cut down… you don't want to hear all the bad news all the time" (Evans, 2021) as they don't want people to switch off. "Sure, we could have said that humans are terrible, penguins are dying. But then you cause a lot of people to switch off" (Evans, 2021). Instead, they found another way to tell stories by making people get attached to animals presented." I do think that a new way of storytelling, and a better way to do it, and a way to reach a much wider audience, is to first get people attached" (Evans, 2021) so they would care for them and want to do something about it, while at the same time they mention the problem they face such as pollution and loss of habitat which result in the decrease in their number in South Africa.

Another effect of climate change can be spotted on films such as *Animal* (2021), *Surviving Paradise: A Family Tale* (2022), and *Our Planet* (2019). In the first two, it is mentioned not only once at the end of the film but throughout it, but mostly through spoken narration talking about the decrease in the numbers of a species, while showing beautiful images of untouched nature. Yet there are some exceptions where they show and mention the fires in Australia and its aftermath. A part of these films 'stories is about how wildlife is facing and adapting to the climate change. For example, *Animal* (2021), is not only surviving in the wild against other

natural dangers but how these animals are adapting to environmental damage, such as saying "habitat loss, hunting, and disease mean fewer than 7000 adult African wild dogs survive, and this family's future is hanging by a thread." But again, this is given a short time while they continue to show and narrate an exciting and emotional narrative of animals 'life, so it is not what the viewer mostly remembers but the spectacular images that match such narration.

This approach seems to be succeeding in attracting the viewers and not setting them off, and that's clear from Netflix data showing that *Animal* (2021) has succeeded to be in the top 10. *Animal,* a docs-series, has already managed to climb to the sixth spot on the Top 10 Netflix most-watched list in the U.S. today — beating out major favorites like "Squid Game," "You" and "Arcane" (Perez, 2021). Maybe that will be a step towards making producers not that afraid of referring to environmental issues by keeping it for example to the end of the film.

Another feature of blue-chip films is the absence of people, as in films such as *Animal* (2021) and *Night on Earth* (2019). There were special parts or episodes in which people appear, although small in regard to the whole show. These were episodes about cities and how animals are adapting to living in them in the presence of people. For example, stories of how elephants wait until darkness falls so they can travel to another place with their calf while being forced to pass by the living area of humans to do so.

What's more, the influence of environmental problems can be discussed regarding how it affected stories told, selection of species, location, and how they are addressing the issue. It is harder today to neglect climate change. David Attenborough's approach has changed. He now says he addresses more the issue of climate change and how to people should take action (Attenborough, 2021). We can see this in *Our Planet* (2019) where despite not being a total cry from other films, he narrated such as *Planet Earth II* (2016) in regards to its dramatic narrative and visual splendor. Our planet is one of the first nature documentaries that Netflix has made in collaboration with WWF and Silverback Films, the same producers as *Planet*

Earth (2006), also narrated by David Attenborough. It took four years in the making, filming different continents in 50 countries with more than 600 members of the crew that helps in its making using the latest 4k camera technology (Cohen, 2019) (Noon, 2019). *Our planet* (2019) places more emphasis on the environmental problem while addressing the effects of climate change in different habitats throughout the episode not only once but repeatedly, yet it is a natural history film and not a 'scientific documentary' as it focuses also on magnificent and spectacular images an emotional storytelling.

The difference that climate change made in such film is first the different ecological habitats selected are related to the effect of climate change on them. For example, each topic of an episode focuses on a habitat of the world such as "The Frozen World," where they tell stories of polar bears, and penguins in their survival against the climate change in this habitat, and how it has affected them in their hunting and surviving. Each episode is similar in this way but with different habitats (coastal seas, forests, the high seas…).

The first episode serves as a mission statement of the series showing different environments, and how climate change is affecting them, for example, In the past the mother bear would have built something to protect her son, but now the sea freezes so late that ice is flat. Also, the narration addresses the reality of nature related to the danger it is facing in the various ecosystem such as saying the narration that 90 percent of the rainforest have gone. They illustrate this decrease by showing motion graphics. However, such a problem is treated more verbally, in the narration, as throughout the episode we see the majestic look of the forest and the animals living in it.

In half of the films I saw, it seemed that natural history films still lean toward downplaying environmental problems. Yet there are still some exceptions to this in some films discussed above where environmental issue are 'mentioned 'more in narration, while mostly continuing to tell the same stories

DISCUSSION

Although we are introduced to new filming technology that has become frequently used in the production of natural history film, it become clearer that these technical developments might not be ‘revolutionary ’as some leading voices in the industry already claimed. As despite that natural history films borrow is an entertainment medium that borrows many aspects from the ‘narrative ’genre, and take advantage of the innovative technique to film and construct a scene that does not mean that new natural history film will be very different from the older ones. On the contrary, it’s the understanding that new techniques can support this genre by telling older stories in a new image that is much clearer and more colorful.

the revolution in technology by improving and introducing new technical means, did not lead to a revolution in film’s formal aesthetic, and it will not necessarily lead to a complete revolution in the other aspect of natural history film such as ‘story models’ because film form also depends on non-technical; elements such as production context and audience expectation. As innovative technology is not only the mean of change in this genre that rely on emotional narrative to attract and hold viewer’s attention, other aspects such as high cost, market preference, and others determines the stories told and how they are told. yet, it could be told that technology has increased the expectation of film’s aesthetic in regard to how it ‘looks’, which means the increasing quality of filming and streaming means offered a spectacular experience for viewers for the first time in viewing nature.

One other influence on today’s natural history films is climate change, which is becoming harder to neglect because of its enormous effect on the environment. Despite that, half of the film’s sample still leans towards neglecting them in favor of a more idolized image of nature. The effect of environmental issues could be a sense in some new natural history films even if

they are only a few exceptions, and that's done by showing and mentioning some issues multiple times during the film.

To conclude, even though the digital age and new filming techniques are considered by many revolutionaries, it might still not be the revolution that happened following the transition to wide screen that changed the *mise-en-scene*. So, it is clear that new technology as discussed before improved image quality, showed new behaviors and offered some other changes, but the extent of these changes did not succeed to fulfill at least yet the full expectation of some leading voices in the industry.

BIBLIOGRAPHY

Armstrong, S. (2020, 2 12). *David Attenborough's Unending Mission to Save Our Planet*. Retrieved from Wired: https://www.wired.com/

Bagust, P. (2008). 'Screen natures': Special effects and edutainment in. *Continuum: Journal of Media & Cultural Studies, 22*(2), 213-226. doi:10.1080/10304310701861564

Barley, S. (2010, November 24). *Wildlife film-maker: Everybody's faking it*. Retrieved from New Scientist: https://www.newscientist.com/

Benjamin, W. (1969). The Work of Art: in the Age of Mechanical Reproduction. *Illuminations*, 1-26.

Bonthuys, D. (2020, March 24). *Here's how drone technology provides a stunning new glimpse into nature in Seven Worlds, One Planet*. Retrieved from Critical Hit Entairtainment: https://www.criticalhit.net/

Bordwell, D., Janet , S., & Kristin , T. (1985). *The Classical Hollywood Cinema.* London: Routledge.

Bouse, D. (2000). *Wildlife Films.* Philadelphia: University of Pennsylvania Press.

Bouse, D. (2003). False intimacy: Close-ups and viewer involvement in wildlife films. *Visual Studies, 18*(2), 123-132. doi:10.1080/14725860310001631994

Bouse, D. (2018). The Inclusive Vision: Essays in Honor of Larry Gross. In P. Messaris, & P. Lang, *The Thread of Concern: Wildlife Films, Art, and Representation* (pp. 189-210). New York: Peter Lang Publishing.

Boyd, O. (2022, January 15). *'The Mating Game': NHK's 8K nature series reveals all*. Retrieved from thejapantimes: https://www.japantimes.co.jp/

Burgess , J., & Unwin, D. (1984). Exploring the living planet. *Journal of Geography in Higher Education*, 93-113. doi:10.1080/03098268408708907

Champagne, C. (2013, 01 12). *Game Of Lions: How Filmmakers Beverly And Dereck Joubert Tell The Story Of Africa's Big Cats*. Retrieved from Fast Company: https://www.fastcompany.com/

Chaves, J. (2015, August 6). *The Realities of Wildlife Filmmaking from Gavin Thurston: Cameraman of "Monkey Kingdom," "Bears" and More*. Retrieved from Videomaker: https://www.videomaker.com/

Chris, C. (2006). *Watching Wildlife.* London: University of Minnesota Press.

Collins, K. (2017). Calls of the wild? 'Fake' sound effects and cinematic realism in BBC David Attenborough nature documentaries. *The Soundtrack*, 59-77.

Cook, D. (2016). *A History of Narrative Film.* New York and London: W. W. Norton & Company.

Cook, D. (2016). The Digital Domain. In D. Cook, *A History of Narrative Film* (pp. 701-731). New York and London: W.W Norton & Co.

Davis, E. (2018, October 29). *WWF Report Reveals Staggering Extent of Human Impact on Planet*. Retrieved from WWF: https://www.worldwildlife.org

Evans, J. (2021, June 30). *Penguin Town: A new way of telling sad stories could break conservation compassion fatigue*. Retrieved from Dailymaverick: https://www.dailymaverick.co.za/

Flynn, S. (2017, May 2). *Drones in Planet Earth II: Interview With Wildlife Filmmaker Michael Sanderson*. Retrieved from Skytango: https://skytango.com/

Follows, S. (2017, January 9). *When and how the film business went digital*. Retrieved from Stephen Follows Film Data and Eduction: https://stephenfollows.com/

Fong, J., & Lee, D. (2017, Mars 6). *How the BBC films the night side of Planet Earth*. Retrieved from Vox: https://www.vox.com/videos/2017/3/6/14829886/planet-earth-low-light

Ganetz, H. (2004). Familiar Beasts: Nature, Culture and Gender in Wildlife Films on Television. *Nordicom Review*, 197-213. doi:https://doi.org/10.1515/nor-2017-0281

Garrison, G. (2017, July 26). *Drones Lend an Antarctic Advantage*. Retrieved from American Cinematographer: https://ascmag.com/

Giannetti, L. (2014). Mise en scene. In L. Giannetti, *Understanding Movies* (13th ed., pp. 47-94). Pearson.

Greene, S. (2020, January 29). *'Night on Earth' Review: Netflix's Nocturnal Nature Doc Is Built Like a Dispatch from Another Planet*. Retrieved from IndieWire: https://www.indiewire.com/

Hautzinger, D. (2017, March 1). *WttW*. Retrieved from The Secret Life of Animals: An Interview with a Producer of 'Spy in the Wild': https://www.wttw.com/

Hilderbrand, L. (2010). On Nature Programming, the Anthropocene, and the. *Cambridge Journal of Postcolonial Literary Inquiry, 7*(2), 210-215. doi:10.1017/pli.2019.35

Hoare, C. (2021, January 19). *logoDiscount codes Puzzles Horoscopes In Your Area Shop Paper*. Retrieved from Express: https://www.express.co.uk/

Hogan, J. (2019, April 3). *5 Ways Netflix's 'Our Planet' Makes You See the World in a Whole New Light*. Retrieved from TvInsider: https://www.tvinsider.com/

Holbrook, D. (2020, February 1). *Netflix's 'Night on Earth' Producer Talks Filming 'From Dusk Till Dawn'*. Retrieved from tvInsider: https://www.tvinsider.com/

Horaczek, S. (2012, October 5). *Director John Downer On Turning Birds Into Cameras And Vice Versa*. Retrieved from PopPhoto: https://www.popphoto.com/

Horak, J.-C. (2006). Wildlife Documentaries: From Classical Forms to Reality TV. *Film History , 18*(4), 459-475. Retrieved from http://www.jstor.org/stable/25165402

Howard, A. (2022, April 13). *WELCOME TO THE ANTHROPOCENE*. Retrieved from Population matters: https://populationmatters.org/

Ivakhiv, A. (2008). Green Film Criticism and Its Futures. *Interdisciplinary Studies in Literature and Environment, 15*(2), 1-28. Retrieved from http://www.jstor.org/stable/44086718

Jeanine Young-Mason. (2020). Nature Documentaries: An Antidote to Anxiety and Fear in the Time of COVID-19 Pandemic. *Clinical Nurse Specialist: The Journal for Advanced Nursing Practice*, 182-183.

Jones, J., Thomas-Walters, L., Rust, N., & Veríssimo, D. (2019). Nature documentaries and saving nature: Reflections on the new Netflix. *People and Nature*. doi:10.1002/pan3.10052

Keller, J. (2021, November 10). *Stream It Or Skip It: 'Animal' On Netflix, A Celebrity-Narrated Nature Series With Remarkable Photography*. Retrieved from Decider: https://decider.com/

King, M. J. (2014). The Audience in the Wilderness: The Disney Nature Films. *Popular Film and Television, 42*(2), 37-41. doi: 10.1080/01956051.1996.9943715

Kozma, L. (2020, August 10). *'Tiny Creatures' Director Says Animals Were "Treated Like Royalty"*. Retrieved from distractify: https://www.distractify.com/

Kressbach, M. (2019). "A World of Wonder:" Planet Earth II and. *The Cine-Files*(14).

Langley, A. (1985). *The making of The living planet.* Little Brown and Company. Retrieved from https://archive.org/

Littleton, C. (2021, October 19). *Netflix to Reveal More Viewership Data as Streamer Changes its Internal Metrics*. Retrieved from Variety: https://variety.com/

Louson, E. (2018). Taking Spectacle Seriously: Wildlife Film and the Legacy. *Science in Context*, 15-38. doi:10.1017/S0269889718000030

Michael, C. (2004). Claiming a style: the 'living cinema' of Pierre Perrault's Pour. *Velvet Light Trap*, 32-47.

Mills, S. (1997, February). Pocket Tigers: The Sad Unseen Reality Behind the Wildlife Film. *Times Literary Supplement, 21*(6).

Monbiot, G. (2002, December 17). *The Guardian*. Retrieved from Planet of the fakes: https://www.theguardian.com/international

Moore, M. (2020, August 10). *Lights, camera, animals — Netflix goes wild in natural history drama*. Retrieved from The times: https://www.thetimes.co.uk/

Mossner, A. W. (2018). Engaging Animals in Wildlife Documentaries: From Anthropomorphism to Trans-species Empathy. In M. K. C. Brylla, *Cognitive Theory and Documentary Film* (pp. 163-179). Palgrave Macmillan, Cham. doi:https://doi.org/10.1007/978-3-319-90332-3_10

Movidiam. (2016, June 20). *Movidiam*. Retrieved from BBC Producer Tom Hugh-Jones: Interview: https://medium.com/

Navarro, V. (2015). New Cinemas: Film and Digital Media. *Film Studies, 12*(1), 36-45. doi:10.7227/FS.12.0005

Nguyen, H. (2015, February 15). *'Planet Earth II' Producers Reveal 6 Sneaky Ways They Filmed Their Animal Stars*. Retrieved from IndieWire: https://www.indiewire.com/

Norfelt, T. (1993). A Model for Natural. *Image Technology, 75*(9).

O'Flaherty, K. (2021, 10 10). *All the Ways Netflix Tracks You and What You Watch*. Retrieved from Wired: https://www.wired.co.uk/

Palmer, C. (2010). *Shooting in the Wild: An Insider's Account of Making Movies in the Animal Kingdom.* Sierra Club Books. Retrieved from https://archive.org/

Parsons, C. (1971). *Making wildlife movies; a beginner's guide.* Stackpole Books. Retrieved from https://archive.org/

Pennington, A. (2020, 30 September). *Netflix's Tiny Creatures: Pushing Narrative With HDR Color Grade*. Retrieved from Postperspective: https://postperspective.com/

Perez, C. (2021, November 15). *The Nature Documentary Series Rising To The Top On Netflix.* Retrieved from Looper: Looper.com

Pershina, R., & Soppe, B. (2019). Melting Icebergs vs. Spectacularization: Storytelling of Conflicting Institutional Demands in Wildlife Documentaries. In *Microfoundations of Institutions* (pp. 85-106). Emerald Publishing Limited. doi:10.1108/S0733-558X2019000065B007

Petterson, P. B. (2011). *Camera Into The Wild.* McFarland.

Ramsdeb, S. (2021, February 28). *The Technology Behind Sir David Attenborough's New Show Is truly Wild*. Retrieved from Bustle: https://www.bustke.com/

Ramsden. (n.d.).

Ray, R. B. (1985). *A certain tendency of the Hollywood cinema, 1930-1980.* Princeton University Press. Retrieved from https://archive.org/

Reisz, K., & Gavin, M. (1978). *The technique of Film Editing.* Focal Press. Retrieved from https://archive.org/

Rooks, I. (2016). What Big Eyes You Have: Animal Point-of-View Shots in Horror & The Limits of Vision. *Spectator*, 23-30.

Shot in the dark –how Dolby technologies helped a production team bring nocturnal nature to life. (n.d.). *Vision Atmos*, 1-10.

Soppe, B., & Raissa , P. (2019). Melting Icebergs vs. Spectacularization: Storytelling of Conflicting Institutional Demands in Wildlife Documentaries. *Microfoundations of Institutions, 65B*, 85–106. doi:10.1108/S0733-558X2019000065B007

Steinhart, P. (1988). Electronic intimacies.

St-Hilaire, F. (2018). *Jean Rouch: The Camera as Theoretical Instrument*. Retrieved from OFF SCREEN: https://offscreen.com/

Strauven, W. (2006). *The Cinema Of Attraction Reloaded.* Amsterdam: Amsterdam University Press.

Strochlic, N. (2018, July 2). *The Inventions That Changed Wildlife Photography*. Retrieved from National Geographic: https://www.nationalgeographic.com/

Travers, B. (2017, February 18). *IndieWire*. Retrieved from 'Planet Earth II' Review: A Revival With Greater Purpose Than Meets the Eye: https://www.indiewire.com/

Turner, N. (2018). Night Manoeuvres: An Introduction to Filming in the Dark. Retrieved from http://www.iawf.org.uk/home/

Waal, F. d. (n.d.). *The App and The Suchi Cultural Reflections of a Primatologist.*

Walsh, S. (2016, January 27). *BBC's Ed Charles gives us the wildlife filmmaking lowdown*. Retrieved from The Science Magzine of Imperial College: http://isciencemag.co.uk/

Warren, P. (2006). *Go Wild with Your Camcorder - How to Make Widlife Films.* Wildeye. Retrieved from https://archive.org/

Watts, J. (2018, November 4). *David Attenborough: too much alarmism on environment a turn-off*. Retrieved from The Guardian: https://www.theguardian.com/international

White, P. (2021, April 21). *Netflix To Spend $17B On Content In 2021*. Retrieved from Deadline: https://deadline.com/

World Map Reveals Every Country's Most Popular Streaming Service. (2021, December 7). Retrieved from Electrical Direct: https://www.electricaldirect.co.uk/

Wunder, S., & Sheil, D. (2013). On taxing wildlife films and exposure to nature. *Oryx, 47*(4), 483-485. doi:10.1017/S0030605312001469